

JACG FACE

NEWSLETTER
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THE JERSEY ATARI COMPUTER GROUP

From the Editors Desk
Dec. 22, 1982 1:36am

It's a strange feeling writing this column at the last minute. Usually I write the Eds Desk column at least a week before paste up. Now, using Letter Perfect, this gets pasted up as soon as it comes off the printer. Amazing - from the Keyboard to the mechanicals in just a few short minutes.

Speaking of a few short minutes (as in saving me some), I will outline my preferences for submissions to this newsletter. 1) LJK Letter Perfect files on disk, 2) 5 inch column, single-spaced, dark black ink, right justified, no printing on perforation and pica font (10 cpi), 3) same as 2 except 3 inch column and condensed font (15-17 cpi), 4) Text Wizard Disk, 5) Microtext files on disk (We will be making Microtext available to JACG members at some future time, I think), 6) BASIC REM statements on disk, 7) same as 6 only tape. Anything else will not be accepted, especially hand written or non-justified type written. The above options are numbered from 1 through 7. The lower the number of the option you choose in submitting items for the JACG newsletter, the better I will like you and the sooner the item will appear in the newsletter.

A few items about the Atari 1200 not mentioned in Dick's column: Help buttons for BASIC (microsoft, built-in); will be shown at CES in January, 2nd quarter 83 release date; and 400/800 software upward compatible.

On a recent out of body experience in Silicon Valley I came across the following information: As of 2nd quarter 83, no Wiley BASIC book packed with the Atari 800 - probably will be Inside Atari



Atari's new 1200XL home computer.

BASIC by Carris. Upcoming software, by 12/82 - Speed Reading, Juggles Rainbow (preschool); 1/83 - Juggles House, Qix (I can't wait), Family Finance; 2/83 - E.T. ; 3/83 - Dig Dug, Atari Writer (word processor supposedly by the guy who wrote the non-existent version of Text Wizard II), Time Management; Rest of 83 - Atari Music Instructor, Superman III (what happened to I & II), Star Troix, Microsoft BASIC II (ROM CART). All software is by Atari. Also, a 40-column printer/plotter with 16 colors is rumoured at \$299. Remember, the above information is believed to be true, but some people doubt the existence of out of body experiences.

Space is tight. Next issue: Special Printer Issue (send in those printer-related articles), business report from the officers, and a special article entitled "Art Leyenberger does Andy Rooney on Word Processors" - don't miss it. Thanks to Alan Hartmann for typing help this issue. We need someone to do a regularly scheduled Q & A column for beginners (which we all were at one time, anyway).

Happy New Year!!
Arthur Leyenberger

AND NOW A WORD FROM THE PRESIDENT...

This month there is a lot of news from Atari. The long rumored "Atari 1000" is in reality the Atari 1200 which will have 64K of internal memory, one cartridge slot, two joystick ports, some programmable keys, a built-in RS-232 interface and a low profile look (see the photo of it in this newsletter). Since it will run all the 800 software, I imagine that the intent here is to make a more cheaply manufacturable product to get down in the mud and fight with the Commodore 64.

At the other end of the spectrum, the rumors are that the 400 will be dropped in price soon until the supply is gone and then be replaced by the 600, which will, indeed, have a full stroke keyboard. With the bottom end of the market falling so rapidly, every manufacturer has to have a low-end machine in the \$100-200 range in order to stay alive.

Atari is coming back into the software market again early next year with computer (and, I imagine, Atari 5200) versions of Defender, DigDug, QIX and E.T. I'm personally looking forward to QIX as this is the kind of game I like but wasn't interested in spending quarters on only to look like a fool.

By the way, here's a little bug in Atari BASIC. Any number raised to the zero power is supposed to be equal to one. However, when you raise -1 to the zero power [(-1)^0] with Atari BASIC, you get ERROR 3. Admittedly, this is not something that one runs across every day of the week, but it is still a bug (which doesn't exist in Microsoft BASIC).

Regarding the surprisingly heated discussion that we had on how to mail our newsletters, bulk rate or first class, here is my two cents worth. Although the treasury seems to be sufficient, remember that most of that money will be consumed in the printing of future newsletters and it's a lot better to have extra money when Issue #12 rolls around then to be short. Therefore, I think that we ought to continue distributing newsletters at meetings to those who come and then mailing out the rest by first class mail. I know that Ed Picciuti, our Secretary, doesn't want to have this job and I sympathize with him to the point of suggesting that we look for a couple of volunteers (teenagers?) to take over the job in return for one library disk or tape of their choice for each month's work. Any volunteers? In the meantime, we'll mail out all the newsletters for a month or two or three or One man's opinion.

There has been a strong reaction by a local computer store to the offer to JACG to purchase ASTRO CHASE at the wholesale price. We need to consider if this is in the best overall interest of the group. I personally believe that it is not a clear cut choice, with lower cost to members on one side and local support for Atari users on the other. Your input on this topic is welcomed. I know that the offer was made with the best of intentions, but, as they say, the best laid plans of mice and programmers oft go into never-never land...

How about giving our poor Newsletter Editor, Art Lyeberger, some feedback as to what you think of the newsletter? I've been there and I can tell you that even negative comments are better than no comments at all. I think it's time for some of you to get off your duffs and participate in this here JACG group, instead of just sitting back and taking it all in. We are really too large a group to have so few contributors. I can guarantee that you will lose most of your major workers if more people don't start to contribute.... to the newsletter, to meetings, to special interest groups, etc. We

have exciting things planned for the coming months, thanks again to the work of a few, but there will always be room for more contributors and helpers. Don't wait to be asked - VOLUNTEER.

LAST MINUTE ITEMS: Just got a call from Mark Cator from Atari. He told me all about the Atari 1200 that I had already read about in the New York Times. All the speculations at the top of this article are right except that there will be no RS-232 interface built-in. He liked the programmable function keys on the 1200. Mark also said that the much delayed BBS program for all the user groups will be mailed out within one week of December 15th. Video tapes #2 and #3 are only needing some introductory graphics and will be out early in 1983.

A peek (as opposed to a PEEK) at Rich Rospond's compilation of the seventy-six questionnaires that he collected at the December meeting showed some surprising results: most had 800s with 48K and a disk drive and nearly half had printers. More details next month.

Richard Kushner-JACG President

1983 MEETING SCHEDULE

All meetings are held on the second Saturday of each month in the Bell Labs Auditorium, Murray Hill, New Jersey. The meetings begin promptly at 10:00 a.m. and finish about noon. Dealer sales are permitted from 9:15 to 10:00 in the lobby, and a general question and answer session occurs from 9:30 to 10:00.

Feb. 12, 1982
March 12, 1983
April 9, 1983
May 14, 1983
June 11, 1983
July 9, 1983
Aug. 13, 1983

J A C G M E M B E R S H I P

The Jersey Atari Computer Group (JACG) invites you to become a member. Dues are \$15.00 per year and entitle the member to 1) Receive the monthly newsletter and when you join, receive back issues of the newsletter as available; 2) Purchase programs from the group's extensive tape and disk librarys at special rates; 3) Join special interest groups or form new ones; 4) Benefit from the expertise and experience of other Atari computer users; 5) Participate in group purchases of software at substantially reduced prices; 6) Receive a membership card that entitles the member to discounts at local computer stores; 7) Attend monthly meetings to learn about the latest hardware and software, rumors, and techniques for getting the most out of your Atari computer; 8) Submit articles and programs to the newsletter and give demos and presentations at the monthly meetings; 9) Participate in sale/swap activities with other members; and 10) Have a lot of fun.

If all of this sounds good then send a check or money order, payable to JACG, to:

Rick Olson
5 Starling Drive
Randolph, NJ 07869

Remember, receiving the JACG Newsletter is just one of the many benefits of being a member of JACG.

THE DECEMBER MEETING

Another enthusiastic crowd was present for this meeting which featured a talk on FORTH by Jim Stanard and a demo of ASTROCHASE by its author, Fernando Herrera.

Our "pre-meeting" question and answer session was less than overwhelming as most members spent time out in the lobby looking at used hardware and software that other members were trying to unload. With few questions to respond to, we instead listened to MICROMEDIA Magazine, Vol. 2, No. 4, which had a number of selections of Christmas music accompanied by simple graphics. We began the regular meeting with some business items, including a report that we now have 221 paid members and a treasury of \$2174.29. This led into a discussion of the distribution of the newsletter, with our Secretary, Ed Picciuti, suggesting that we ought to go to bulk rate mailing in order to save some postage. This led to a heated discussion of the merits of bulk mailing vs. first class mailing vs. distribution at meetings. A motion was finally passed authorizing the executive board to mail all newsletters by whatever means they determine is best.

We then had a report by Dick Kushner, our President, on some latest news, including the Atari 1200.

Program Chairman, Rich Rospond, then took over and introduced Jim Stanard, who gave a very informative talk on FORTH. He had used APL extensively and now was working a lot with the VALFORTH package. He was able to give a real feel for the advantages and disadvantages of this charismatic language.

Fernando Herrera then demonstrated his game and graphic masterpiece, ASTRO CHASE. Everyone was very impressed by the introduction and the map on which the game took place. Fernando explained a little about the game itself and promised to come back to a later meeting to share with us some of the modules that he constructed to make this game. He also put in a plug for his company and his search for programmers to staff it.

Vince Murphy and his son then gave a demo of Adventure International's SEA DRAGON, and we all were impressed by how far they got into the game. We were able to see parts of the game that it would have taken weeks of practice to become proficient enough to see (if at all!!!).

Art Leyenberger, our Editor, then reported some details on the new Atari 1200. The general consensus was that it would be cheaper than the 800, have some pluses and some minuses relative to

the 800 and certainly be cheaper to manufacture. Art then demoed Atari's GALAXIAN, K-Byte's K-STAR PATROL, and EMI's SOCCER. All got pretty high ratings by Art and his demos got very high ratings from the audience.

We concluded with a surprise drawing for a Wico joystick, which was donated for this purpose by J-N Sales Co. of Livingston. The winner was Rick Barclay.

NOTE: Several representatives from CompuServe will be at our January meeting to demonstrate how their system works. We will also be able at that time to place orders for a starter package that they will be able to offer us at a discounted price. We will have a modem hooked up at this meeting to dial into CompuServe.

NOTE: Remember that our new practice is to have computer item sales from 9:15-10:00 (used original software with original documentation only) and a question and answer session from 9:30-10:00.

POKIN' AROUND By Jay Bloom - JACG

WELCOME TO POKIN' AROUND, WHICH WILL APPEAR MONTHLY IN YOUR COPY OF THE JERSEY ATARI COMPUTER GROUP NEWSLETTER.

THIS MONTH DISK I/O LOCATIONS, AN IMPORTANT PART OF ANY PROGRAM WRITTEN IN BASIC, WILL BE LISTED HERE.

FIRST, THERE ARE LOCATIONS 838 AND 839 WHICH ARE USED TOGETHER. FOR INSTANCE, IF YOU POKE 838,166 AND POKE 839,238 THEN ANYTHING THAT WOULD NORMALLY GO TO THE SCREEN (OR MONITOR) WOULD NOW GO TO THE PRINTER! NEAT HUH? TO SET THINGS RIGHT YOU WOULD THEN POKE 838,163 AND POKE 839,246.

ANOTHER LOCATION THAT IS REALLY NIFTY IS LOCATION 65. DID YOU EVER LOAD A PROGRAM FROM CASSETTE OR DISK AND GET THAT HORRIBLY NAUSEATING BEEPING SOUND? WELL, NO MORE! IF YOU POKE 0 INTO THE ABOVE LOCATION YOU CAN FINALLY QUIET YOUR COMPUTER.

ALSO, AS PROMISED, WE WILL EXPLAIN HOW TO PEEK. PEEKING IS LOOKING AT THE CONTENTS OF A LOCATION IN MEMORY. FOR INSTANCE, IF LINE NUMBER FIVE READS: 5 POKE 764,255 AND LINE NUMBER TEN READS: 10 IF PEEK(764)=33 THEN GOTO 10, THEN THE COMPUTER WOULD WAIT FOR THE LETTER A TO BE PUSHED. THE COMPUTER CHECKS THE KEYBOARD FOR THE LETTER A'S VALUE. IF A KEY IS DEPRESS AND THE VALUE IS NOT EQUAL TO 33 THEN THE COMPUTER WILL WAIT FOR AN INPUT WITH A VALUE OF 33 WHICH HAPPENS TO CORRESPOND WITH THE LETTER A. YOU CAN CHANGE THE 33 TO ANY NUMBER TO CORRESPOND TO ANY KEY ON THE KEYBOARD. THIS IS VERY HELPFUL IN A PROGRAM THAT REQUIRES A CERTAIN INPUT.

IN CONCLUSION, PEEK AND POKE MAY SEEM VERY COMPLICATED, BUT IN REALITY IT IS NOT ONLY EXTREMELY EASY, BUT ALSO EXTREMELY HELPFUL.

IF YOU HAVE ANY NEW LOCATIONS OR PROGRAMS THAT WOULD BE OF INTEREST TO THE GROUP, PLEASE FEEL FREE TO SEND THEM TO ME VIA ART LEYENBERGER (OUR BELOVED EDITOR).

Ed. Note: I am quite excited. Although this column is in all capital letters (that's the way it was received) it is a major breakthrough. LJK's Letter Perfect word processor was used for this column and I was able to print it exactly as you see it on my C. Itoh 8510 printer. No Text Wizard, no 64% reduction, and no shipping off files to Dick Kushner to print on his Epson printer. I can even underline if I want to!!! This is the dawn of a new age.

WHY AN ATARI?

Reprinted from STARFLEET COMMANDER, 9/82

Many people who are interested in buying a personal computer ask, "Which is best, Apple, TRS-80, Pet, Atari, ...?". The answers they get, depending on who they ask, are something like:

"Well, TRS-80 is better because you can buy one at any of the millions of Radio Shack stores."

"Apple is best. Why? Because I have an Apple, and so do many of my friends. Apple is great, because you can buy hardware for just a few hundred dollars per board to give you things like lower case characters and a real-time clock!"

"TRS-80 is the one. It's been around so long that all the bugs are probably worked out (although my friend just bought one, and he as trouble when...)."

Do you see and REAL GOOD reasons? Let me see if I can do a little better...

Why buy an Atari? To start with, it is much faster than the Apple (much, much, much faster than the TRS-80 and the rest) because its 6502 microprocessor runs at a higher speed, plus it has four (count 'em) ADDITIONAL special microprocessor chips to handle the TV display, sound generation, joystick/paddle input, keyboard input, serial data bus, and miscellaneous housekeeping functions. This takes a big load off the 6502. These same special chips that give it speed also give it graphics and sound capability that no other computer can even approach!

* Four separate sound channels that are mixed and sent to your TV speaker (or stereo), and each one has program-controllable volume, pitch, and sound characteristics.

* Color registers that allow you to INSTANTLY change colors on the entire screen, or a part of it. One hundred-twenty-eight colors to choose from and eight different graphics modes.

* Player/missile graphics, which allow you to perform true animation of objects on the screen. Each player or missile can have a different color, and all can be moved or changed in microseconds. The players/missiles are totally independent of the rest of the display (called the "playfield"), but have many options controlling how they interact with the playfield.

* Six different text modes, with three different character sizes in both UPPER and lower case (the different character sizes can be mixed on the same screen), not to mention that the characters can be any of the 128 colors. And the programmer can modify or create a new character set rather easily.

* Fine scrolling of the screen in any graphics mode, both vertically and horizontally.

* A program-accessible real-time clock.

* Built-in device handlers (no additional cards needed).

* Four Analog-to-Digital (or Digital-to-Analog) converters right in front!

* TV modulator built in, and (on 800) a video monitor output.

* Expandible memory to 192K (on 800) by using three 64K RAM boards and a slightly modified Operating System

* Hardware-generated random numbers, which are very fast.

* Fully vectored interrupt scheme, which makes it extremely flexible as well as powerful.

* Changing programming languages is as easy as plugging in a ROM cartridge.

* 3-D effects by using color shading.

* Available lightpen that plugs in the front.

* Computer-controlled ON/OFF feature when using the cassette recorder, and capability to play an audio channel from the cassette through the TV speaker.

Well, did you see any good reasons here? Chances are that you didn't need convincing that Atari is #1 since you already own one. So pass this article on to your friends and associates! There are a lot of people that cannot make up their minds. The choice is obvious!

Ed. Note: I had originally planned to write a similar article way back in September, when I was preparing my first issue of the Newsletter. Then I came across what you have just read. I could not have put it more succinctly! This information is valuable ammunition for any Atari owner to use in the "Computer Wars" that are currently going on at a computer store near you. Check local listings.

PROGRAM CHAIRMAN' REPORT

As I promised, here is a look at what we have planned for the next two meetings.

In January, representatives from Compu-Serve will be coming in to demonstrate what their company has to offer those of us with modems. Even if you don't currently have a modem, their presentation might convince you to purchase one. We will provide a modem for them to dial into their data-base, followed by a question and answer period.

In February, the main topic will be dedicated to the modems themselves. I have lined up several modem users, who will talk about the models they are currently using, models they chose not to buy, etc. With the number of Bell employees, I feel that this is a topic that we can handle quite well.

I will publish the results of the membership survey in next month's issue, and provide more information on future meetings.

A special thanks to Phil D'Ambola of Earthrise Computer in Madison, for providing most of the programs that you see demonstrated at each meeting.

Richard Rospond 635-2936

AT A TURTLE'S PACE with ATARI PILOT
by Curt Springstead JACG

This month I have a mixed grill of information and lessons. A couple of book reviews and the story of the paddle and joystick with the turtle game from last month.

Unlike BASIC or even assembly language the PILOT user is without a large body of printed references. The majority of the magazines ignore us and there have been only a few books published. The first book I saw was PICTURE THIS by David Thornburg and published by Addison-Wesley and sells for \$14.95. If you have entered the sample programs from your PILOT manuals and taken the time to study them a bit you will probably not be impressed by this book. The author covers the use of turtle graphics well and has many good examples, however this book is better used as a text for a classroom setting. This book replaces the graphics sections of the ATARI manuals and in many ways is much clearer and has many more interesting examples. To sum it up if you are looking to learn more than the manuals told you forget it, but if you are teaching a class or only have the home version of PILOT then you will find this book's presentation of turtle graphics very helpful.

The second book is much newer and has been written as a textbook with review questions at the end of each chapter. Atari PILOT for Beginners by Jim Conlan and Tracy Deliman is published by Reston Books and sells for the ever popular \$14.95. This book replaces the Student Reference Manual that comes with the PILOT cartridge if you are teaching PILOT to a class. Once again this book covers no new material, it simply presents the basic material in a different format with different examples. Last month I promised to present a way of adding joystick and paddle input to the SHOOT game. As with many good ideas there are some flaws in using these devices in the game as it was designed. What follows is more of a tutorial on the use of the controllers rather than an actual improvement to the game.

Paddles allow you to vary the value of a variable from 0 to 227 as you turn the knob. You may also press the trigger to give the program either an on or off signal. My first idea was to use the paddle to turn the turtle to the direction needed. Problem one, the knob on the paddle and the angle of the turtle at the start of the game would have no relationship to each other. Solution, set the values on the paddle to correspond to specific angles of facing and move the turtle to the angle indicated by the value from the paddle. The minor problem of there being 360 degrees of facing and only 227 settings for the paddle caused a bit of a problem since the PILOT language only supports integer math making the 1.585903 degrees per point on the paddle quite impossible. The second problem was that with my luck the program would place the turtle at an odd angle that would catch the rounding error in that value. Solution two, use the paddle to show amount to turn relative to the existing facing of the turtle. For example, the turtle faces angle 158 and the paddle is reading 90 when the game initializes. Keep checking the value of %P0, the PILOT variable for the input from paddle 0, and note the change from the old value of %P0 to

the new value and turn the turtle by that amount. Ok, the paddle is turned and the new reading is 132. The difference from the old paddle reading of 90 is a positive 42. Turn the turtle a positive 42 degrees and it will now face angle 200. So far so good. The code to do this type of action would look something like this:

```
10 R: Save old value of paddle
20 C: S=%P0
30 *LOOP
40 J(%P0<>%S):*TURN [ if paddle
    changes execute turn routine
50 PA:20 [ pause a little to give the
    paddle a chance to stop
60 J:*LOOP
```

This solution was adequate but also required that the TURN routine be adjusted so that each unit of paddle movement was 2 or 3 degrees. The next problem was the movement forward or backward of the turtle. That was easy, every time the trigger, %T0, was pressed, had a value of 1, the GO routine was executed with the movement factor equal to 3 to 5 units.

This solution was tried but the turning of the paddle was confusing to my young testers and was technically disatisfying to me. So all that was learned was that the 8 paddles can be read by %P0 to %P7 and their triggers as %T0 to %T7. Having been disappointed by the paddle option let's hope the joystick works better.

The joystick application was much more successful. The joysticks are read with the variables %J0 to %J3 and the triggers are read with %T8 to %T11. The idea was to use the joystick to control left and right turning and forward and back motion of the turtle until it is in the circle. The values for the joystick in the eight positions are not like anything in BASIC but are set up as follows:

```
      1
    5   9
  4   0   8
    6   10
      2
```

The routine I finally used ignored the the 5,9,6 and 10 readings and executed the TURN routine if 4 or 8 was detected and the GO routine if the 1 or 2 was detected. Here are the changes to be made to the original program and the reasons behind them.

Change lines 280-310 as follows:

```
280 J(%J0=4):*TURN
290 J(%J0=8):*TURN
300 J(%J0=1):*GO
310 J(%J0=2):*GO
```

These lines read jump, if the expression is true, to the routine named.

Delete lines 320-340

Change Line 350 to read:

```
350 J:*PROMPT
```

Continued on Page 12

The Cost of Financing By Eric Jacques - JACG

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Buy now and pay later has become a way of life in our society. We buy a house and take out a mortgage, or finance a car for three years. We can remodel our kitchen and finance the expense.

The law makes it mandatory for the Finance company or Bank to tell us the true annual percent interest but how do they determine what our monthly payment should be and what do we actually have to pay for the item that we bought.

This little program written for the ATARI will answer these questions and tell you just how much you will actually have to pay for that easy payment plan.

A note to those of you with APPLE or COMMODORE computers: this program does not use any special features of the ATARI and should run on your computer with little or no changes.

The program requests the amount of the loan, the number of years that the loan will be in force, the starting year and then the particular month that you will make your first payment. The payment month should be entered as a number from 1 for Jan. to 12 for December. Lastly the program will request the interest rate which you should enter as a straight percent. The program will make all of the necessary mathematical conversions and calculations for you.

The query questions are directed to the screen but in the version listed all of the output are directed to your printer so that you might have a permanent copy. If you do not as yet have a printer then just change all of the LPRINT statements to PRINT then use the control 1 keys to stop the program during execution and copy down any of the numbers that you need. The program will continue when you hit a second control 1. You may repeat this procedure as many times as you wish.

The program calculates what your fixed monthly payment should be and then calculates the interest as a true annual interest on the declining balance of your loan.

The output consists of the year, month, the fixed monthly payment, the interest cost for that month and lastly the loan balance or what is left of your loan. The total interest is given for each year of your loan and at the end of the run you'll get the total interest for the entire loan period as well as the total cost or the purchase plus the interest.

There is no limit for the duration of your loan as the program can be used for 3 year auto financing as well as 90 year mortgages.

The program has four functional sections: the first (lines 10 through 70) is the query section for the particulars about your loan.

Line 80 converts your percent interest to the necessary fraction for the calculations and the all important line 85 computes your fixed monthly payment according to the size of your loan and the interest rate that you are paying.

The next three almost identical sections computes the costs for the first year, the second through the next to last year and then the last year of payment. The first and last years of payment are separated because it is extremely rare to take out an installment contract on Jan 1. Both the first and last years will not be full payment years and you can use the programs output for these years on your income tax as interest deductions.

The calculation sections could be done with one subroutine but I have chosen the current code for ease of understanding.

Lines 90 through 150 handle the first partial year, lines 155 to 225 cover the remaining full years and lines 230 to 285 complete the calculations for the final year. The variable GRNTOT is the accumulator for all of the interest and TOTCST or total cost is the sum of GRNTOT and the original loan.

Use this program and you may be surprised at what it actually costs to buy on time.

```

1 REM HOW MUCH DOES IT REALLY COST
2 REM BY ERIC JACQUES
10 DIM RINT(12)
15 ? "YOUR LOAN PRINCIPLE IS ?"
20 INPUT TLOAN
25 FLOAN=TLOAN
30 ? "HOW MANY YEARS FOR YOUR LOAN ?"
35 INPUT N
40 NP=N*12
45 ? "WHAT IS YOUR STARTING YEAR ?"
50 INPUT IYR
55 ? "WHAT IS YOUR FIRST PAYMENT MONTH 1 =
JAN, 2 = FEB ETC"
60 INPUT MONTH
65 ? "THE INTEREST RATE IS ? ";
70 INPUT RATE
75 NPE=IYR+N
80 RATE=(RATE/100)/12
85 MP=(TLOAN*RATE)/(1-(1/(1+RATE)^NP))
90      LPRINT      :LPRINT      "
";IYR:LPRINT :LPRINT
93 rem 8 spaces then 10 spaces twice
95      LPRINT      "MONTH      PAYMENT
INTEREST      LOAN BALANCE"
100 LPRINT
105 IYR=IYR+1
110 FOR J=MONTH TO 12
115 RINT(J)=RATE*TLOAN
120 INTOT=INTOT+RINT(J)

```

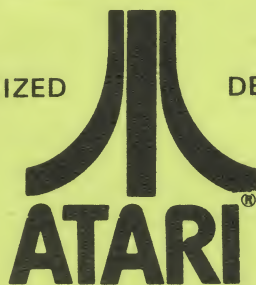
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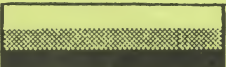
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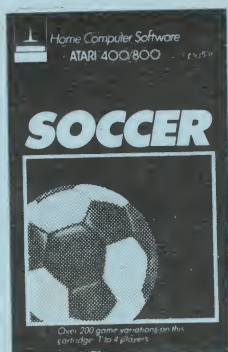
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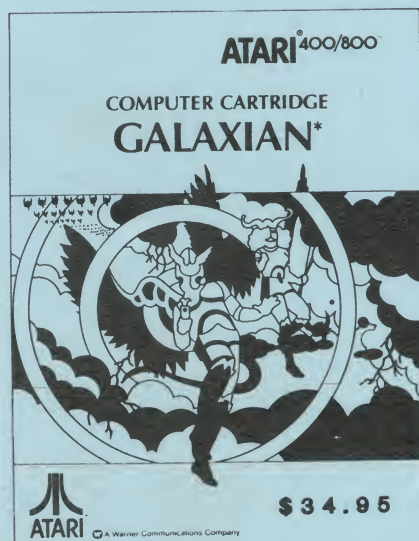
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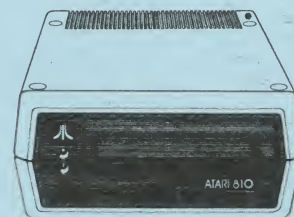
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This line causes the program to loop through the joystick reading until a movement of the stick is found. These are the only changes needed to read the joystick. We have eliminated the text prompt as this is unnecessary now. The only other changes needed are due to the fact that the player is no longer providing the values for the TURN and GO routines and instead each movement of the stick will have a preset value.

Change and add these lines as follows:

```
480 C(%J=4):#A=%A-5
485 C(%J=8):#A=%A+5
```

These lines calculate the new angle the turtle will be facing. The existing angle of the turtle is determined by a special PILOT variable, %A, which provides the angle in degrees that the turtle is facing. The program either decreases or increases that angle by 5 degrees depending on which way the stick was pressed and uses that as the new angle in line 500 which has been changed to use the absolute turn instruction rather than the relative form. Line 500 should read:

```
500 GR:TURNTO #A
```

The original version used TURN instead of TURNTO in this line. TURN causes the turtle to turn the number of degrees given from its current facing. The TURNTO form gives the specific angle to which the turtle is to point. The GO routine is similarly modified:

Remove line 580.

Change and add these lines:

```
600 GR(%J0=1):GO 5
605 GR(%J0=2):GO -5
```

This simply tells the turtle to move ahead or back 5 units each time the stick is moved forward or back.

As you execute this program with the changes made you will notice the way the picture of the turtle "eats" the circle as it moves onto it. This problem is created by the nature of the turtle graphics and the way I chose to get around the math solution to determining if the turtle is in the circle. Each time the turtle is erased before it is moved it sets the area back to the background color and creates a shadow of the turtle in the circle. For this reason the turtles forward movement must be in large steps to be sure that a spot of the color of the circle will be left for the program to find and determine that the turtle has made it. My first attempt with movement at one unit caused a nice clean path to be eaten through the circle but no detection of having been in the circle. To defeat this gremlin you would have to resort to the mathematical determination of the location

and/or redraw the circle between the erasure of the old turtle location and the drawing of the new.

That concludes the changes to the game and our experiment with the controllers on the ATARI. It is sometimes convenient to place pause (PA:) commands in the loops that read these devices to give your players time for the system to read the controller.

There are two publications that you should have if you want more information on the use of joysticks and paddles with PILOT. If you

bought the "home" version of PILOT you are missing a book called the PILOT PRIMER. This book covers many things not in the Student Reference manual and has many good examples of all the commands. To get this book send \$27.95 to: ATARI, Inc., 1312 Crossman Ave, Sunnyvale, CA, 94086; Attn: Kathy Aldrich. With this book you will be well on your way with PILOT. The second useful publication is the ATARI PILOT External Specifications. This is the spec that was used during the design and implementation of PILOT. You can get a copy of this for free by calling the toll free number for ATARI and asking for it.

Joysticks, Reprise By Alan B. Hartmann - JACG

As a followup to the discussion at the November meeting on joysticks, the following diagram is presented to help clarify the pinouts on the joystick port. Also, a word of warning may be appropriate, as the system provides a +5 volt output on pin 7 of the controller jack. I'm no engineer, but my reading of the schematics leads me to believe that if pin 7 should accidentally short to pin 8 (the signal/chassis ground), some undesirable consequences may result. (Do you smell a power supply burning?)

Anyone attempting to build their own joystick or paddle should be extremely careful that the correct pins are used. If you look very closely at the controller jacks on the front of your Atari (you may need a flashlight and a magnifying glass), you should see something that resembles this (right down to the numbers next to the pins!):

The pin assignments are:

Pin ===	Joystick =====	Paddle =====
1	Up (forward)	-
2	Down (backward)	-
3	Left	A fire button
4	Right	B fire button
5	-	"Pot" B
6	Fire Button	-
7	- *	+5 volts
8	Ground	Ground
9	-	"Pot" A

* See warning in text about pin 7!!

The joystick direction control signals and all the 'Fire Buttons' are normally 'open' connections (i.e., not normally connected to anything other than the designated pin). When any of these signals are connected to pin 8 (through the action of the joystick closing the switch), the Atari will consider that particular signal to be 'ON'.

The paddle control is nothing more than a 1 megohm variable resistor (or 'potentiometer', called 'POT' for short), with pin 7 (+5 volts) connected to one of its connections, and pin 9 (for the 'A' paddle), or pin 5 (for the 'B' paddle) connected to the other. If you get a 'center-tapped' potentiometer, be sure to use the center connection and one of the ends, and NOT the two ends. Depending upon which end of the pot you use, full clockwise rotation of the control will result in either the extreme low value (0), or the extreme high value (228) being returned by the PADDLE function (assuming you are using BASIC, of course). The Atari paddles return the extreme high value for full counter-clockwise rotation.



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Continued from Page 6

```

125 GRNTOT=GRNTOT+RINT(J)
135 TLOAN=TLOAN-(MP-RINT(J))
140 LPRINT J,MP,RINT(J),TLOAN
145 NEXT J
150 LPRINT :LPRINT "          THIS YEARS
INTEREST IS ";INTOT:LPRINT
155 FOR J=2 TO N
160          LPRINT "
";IYR:LPRINT :LPRINT
165 LPRINT "MONTH          PAYMENT
INTEREST          LOAN BALANCE"
166 LPRINT
170 INTOT=0
175 FOR I=1 TO 12
180 RINT(I)=RATE*TLOAN
185 INTOT=INTOT+RINT(I)
190 GRNTOT=GRNTOT+RINT(I)
200 TLOAN=TLOAN-(MP-RINT(I))
205 LPRINT I,MP,RINT(I),TLOAN
210 NEXT I
215 LPRINT :LPRINT "          THIS YEARS
INTEREST IS ";INTOT:LPRINT
220 IYR=IYR+1
225 NEXT J
230 INTOT=0
235 LPRINT "          ";IYR:LPRINT

:LPRINT
240 LPRINT "MONTH          PAYMENT
INTEREST          LOAN BALANCE"
241 LPRINT
242 JK=MONTH-1
245 FOR I=1 TO JK
250 RINT(I)=RATE*TLOAN
255 INTOT=INTOT+RINT(I)
260 GRNTOT=GRNTOT+RINT(I)
270 TLOAN=TLOAN-(MP-RINT(I))
272 IF TLOAN<0 THEN TLOAN=0
275 LPRINT I,MP,RINT(I),TLOAN
280 NEXT I
285 LPRINT :LPRINT "          THIS YEARS
INTEREST IS ";INTOT:LPRINT
290 LPRINT "TOTAL INTEREST PAID IS ";GRNTOT
295 TOTCST=GRNTOT+FLOAN
300 LPRINT "YOUR TOTAL COST WILL BE ";TOTCST
310 END

```

=====
TRADING POST
=====

Trading Post is a monthly column that allows JACG members to list items for sale or swap. There is no charge for this service, and material must reach me by the 20th of the month.

For Sale: Atari 820 40-column printer. \$150.00. Doesn't need interface module, connects directly to Atari 400. Call Walt Pavlik, (201) 922-0598.

GRAPHICS CORNER

By Bob Klaushe, San Diego A.C.E.

Here is a simpler version of the graphic program published in the December issue of the 'San Diego A.C.E.' Newsletter. It takes a number entered by the operator, and spaces that number of points evenly around a circle. If the number is a prime the program connects each point to every other point.

```

10 DEG :GRAPHICS 8:COLOR 1
25 PLOT 80,12
30 PRINT "ENTER PRIME # OVER 3";
40 INPUT N1
50 FOR M=0 TO INT(N1/2)
60 A1=(INT(N1/2)-M)*360/N1
70 A=-A
80 FOR N=0 TO N1
90 A=A+A1
100 IF A<360 THEN 120
110 A=A-360
120 DRAWTO 79*SIN(A)+80,80-0.86*79*COS(A)
130 NEXT N
135 GOSUB 300
140 NEXT M
190 END
295 REM INSERT DELAY IN PLOT
300 FOR X=1 TO 100
310 Y=X
320 NEXT X
330 RETURN

```

CAMP FAIR IN NYC

There will be a computer fair in New York City on January 22nd and 23rd at the Walden School. Many camps will be there to discuss their programs and plans with potential campers and their parents. Atari Computer Camps will be there for those who are interested in computer camp for next summer. They are available for children under the age of 18 and will be held at seven locations (Massachusetts, Stroudsburg, PA, Baltimore, U. of North Carolina, Minnesota, San Diego and near Sunnyvale,CA). There will be four two week sessions. They are also looking for school teachers to serve as camp teachers. For more information, contact Tony Pellechio of JACG, who ran the camp at Stroudsburg last summer, at 537-4404.

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